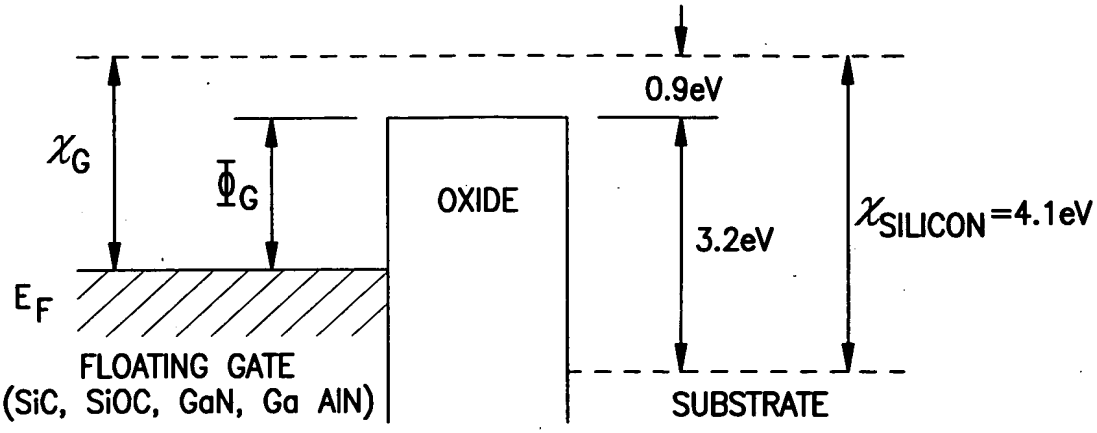


FIG. 1A
(PRIOR ART)

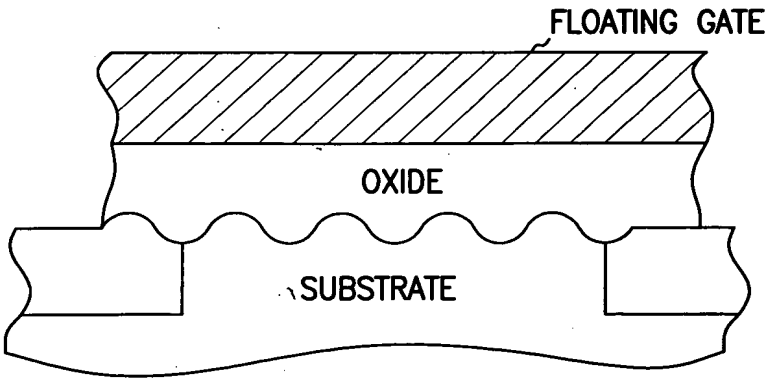


FIG. 1B
(PRIOR ART)

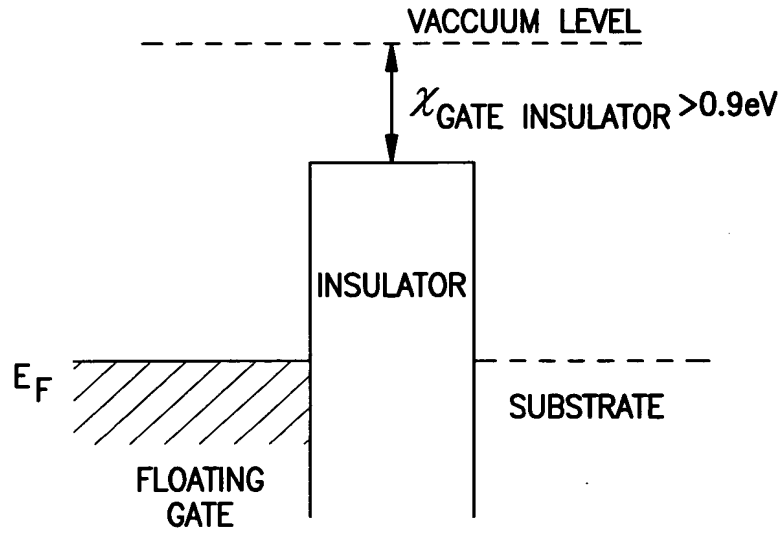


FIG. 1C
(PRIOR ART)

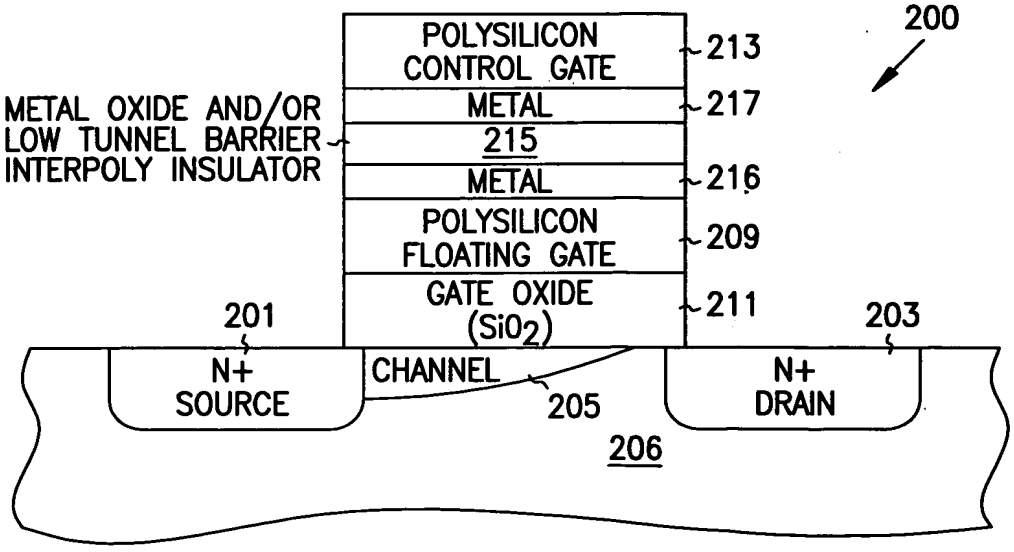


FIG. 2

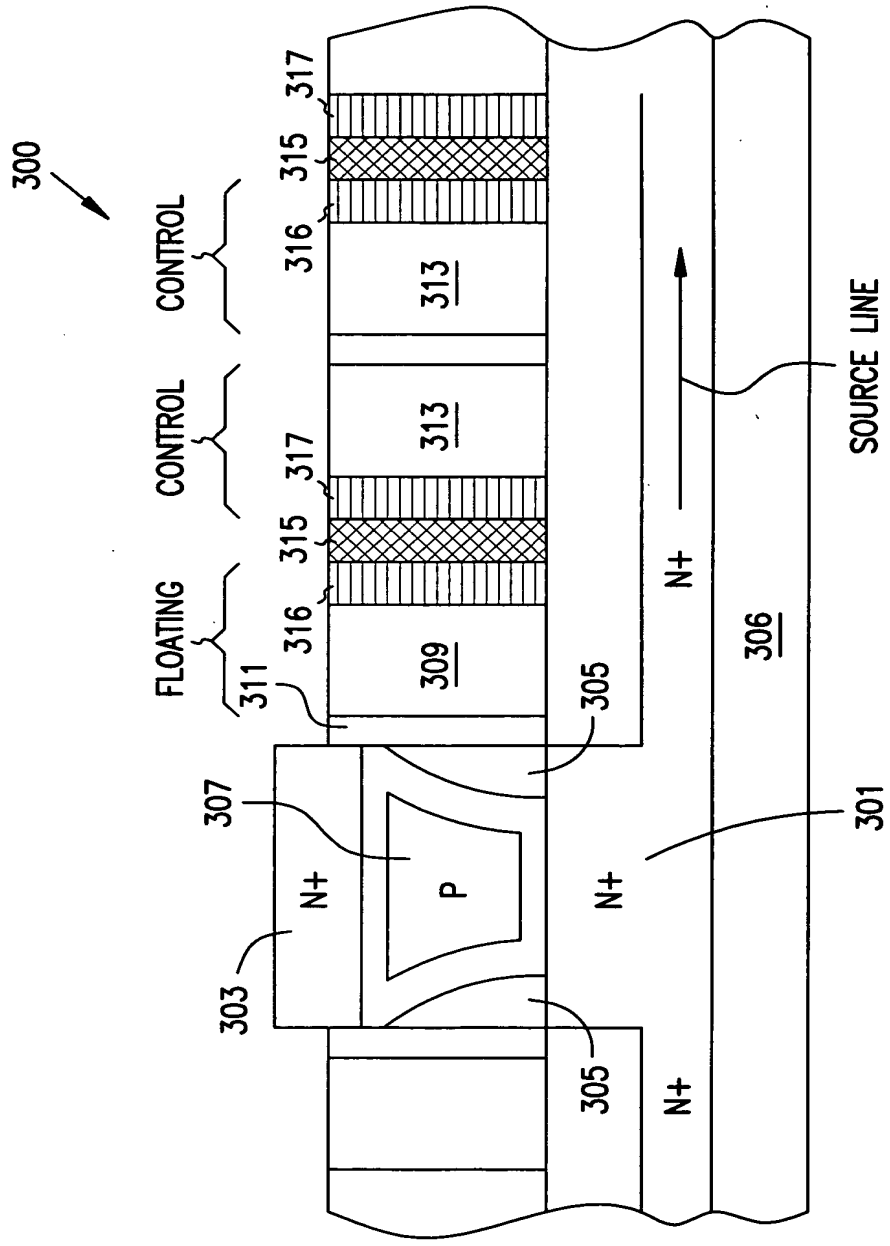

300
CONTROL
CONTROL
FLOATING
317
315
316
313
313
317
315
316
309
311
305
307
303
P
N+
N+
N+
N+
305
306
301
SOURCE LINE

FIG. 3

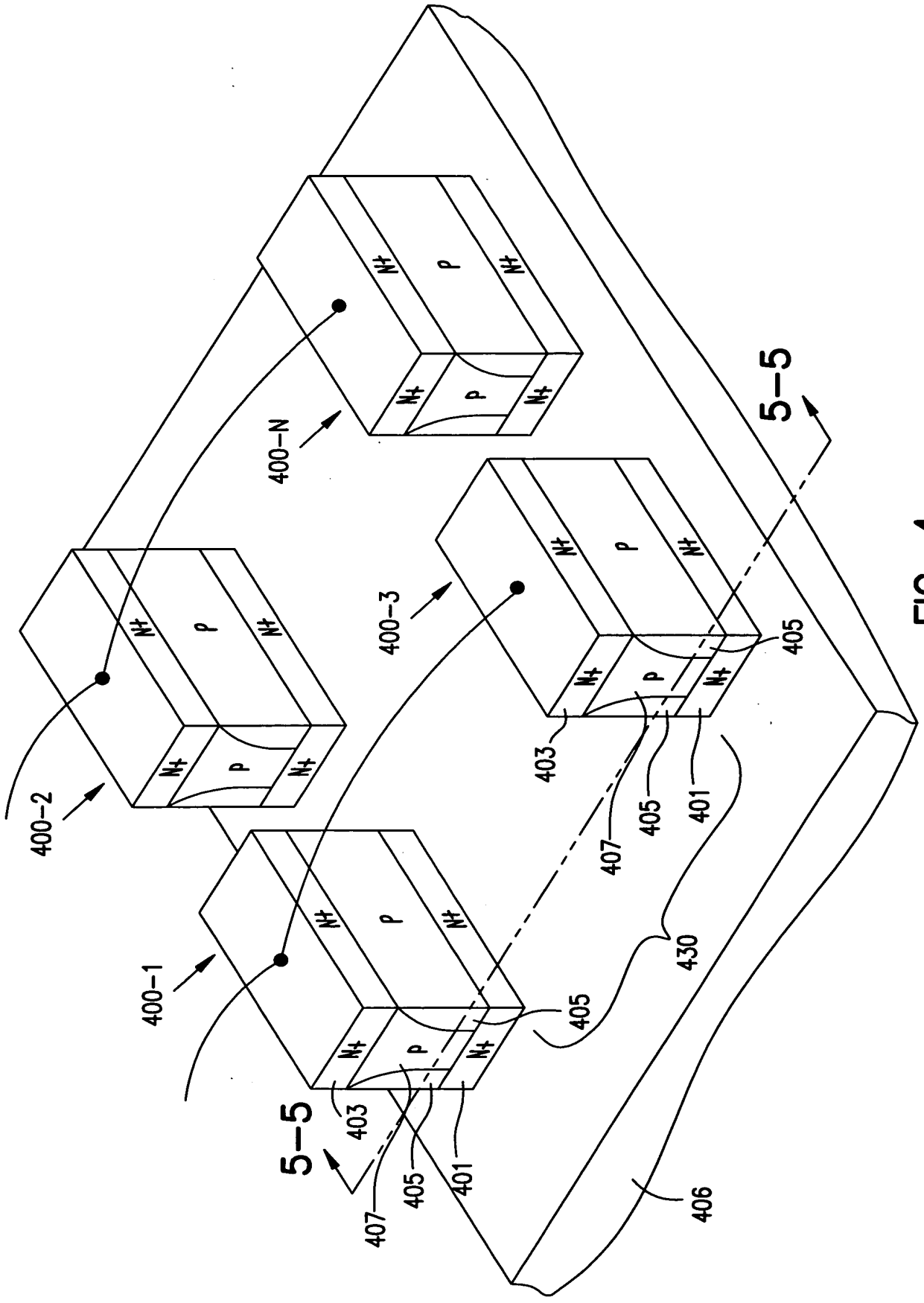


FIG. 4

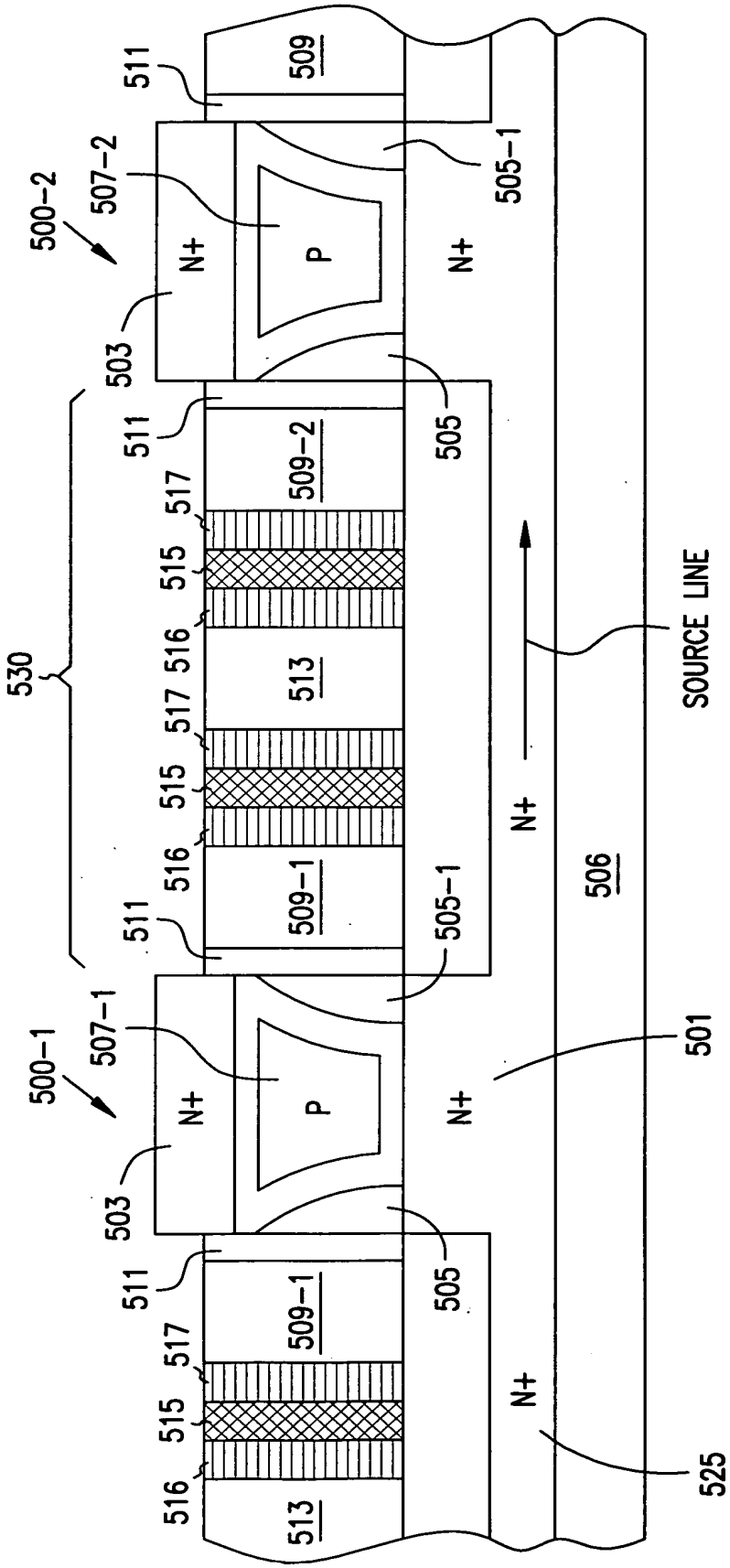

511
509
505-1
500-2
507-2
N+
P
N+
503
505
511
509-2
517
515
516
530
513
517
515
516
509-1
511
505-1
SOURCE LINE
N+
506
500-1
507-1
501
N+
P
N+
503
505
511
509-1
517
515
516
513
N+
525

FIG. 5A

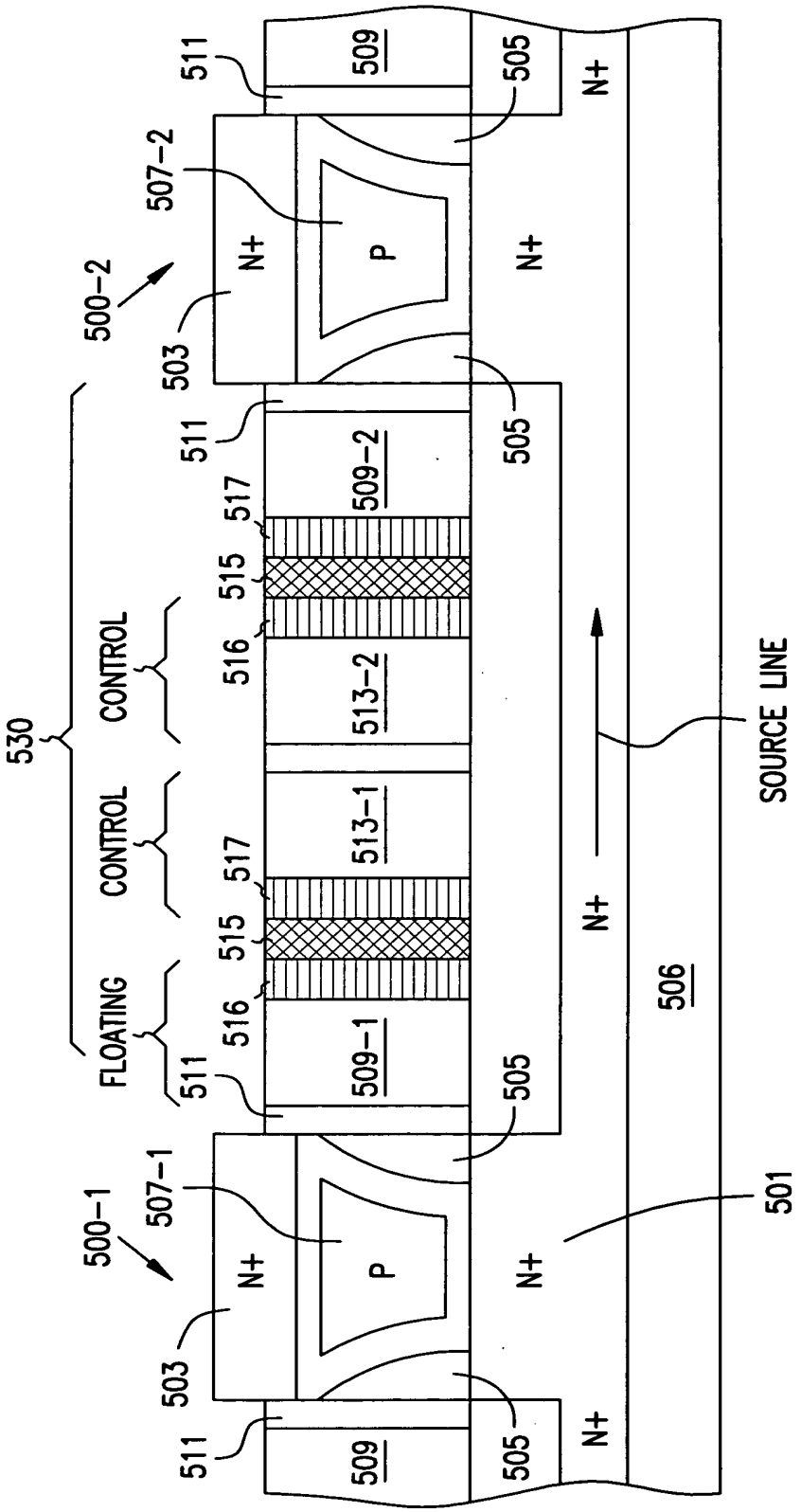


FIG. 5B

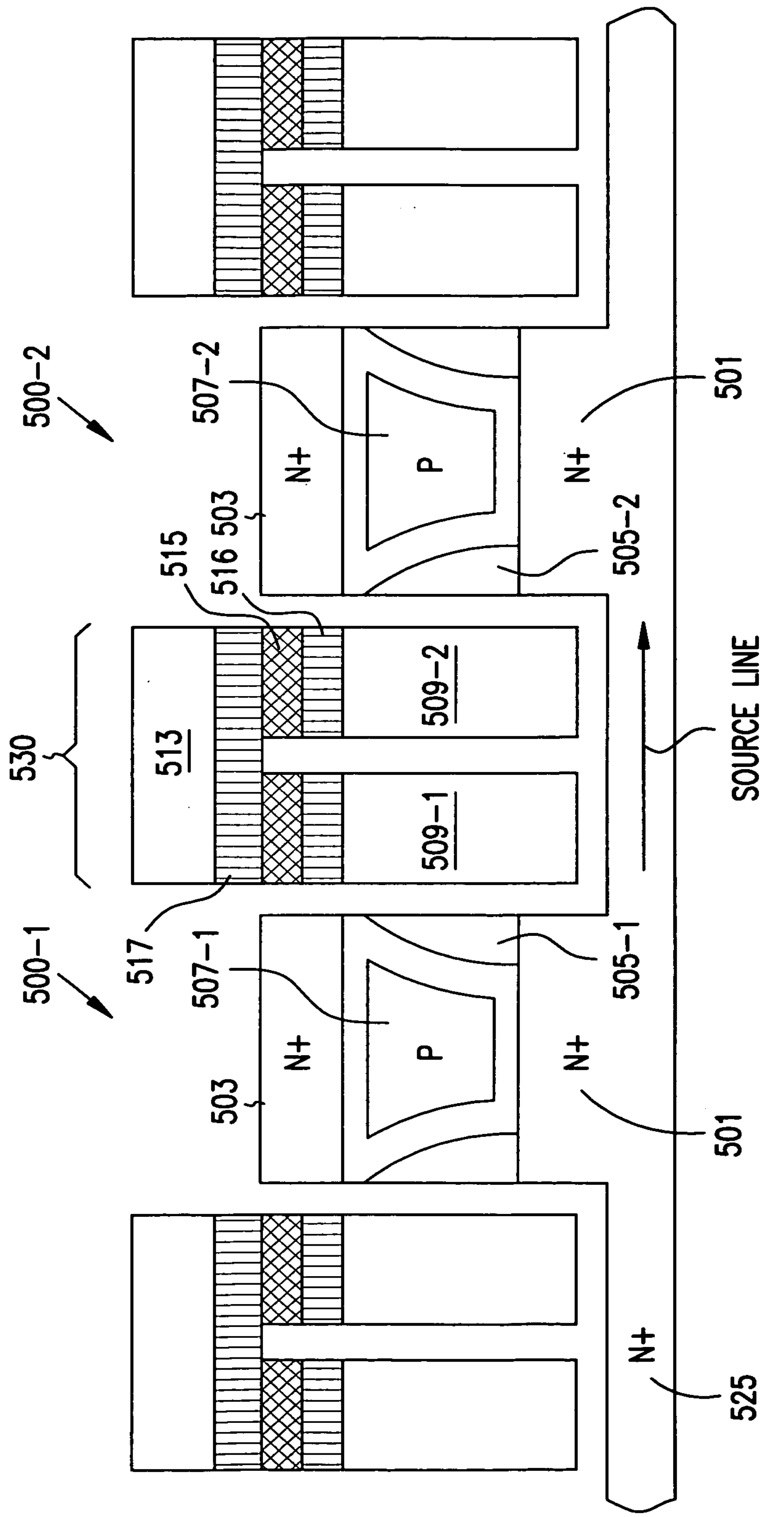

500-2
507-2
501
N+
P
515
516
503
505-2
509-2
509-1
513
530
SOURCE LINE
517
500-1
507-1
505-1
525

FIG. 5C

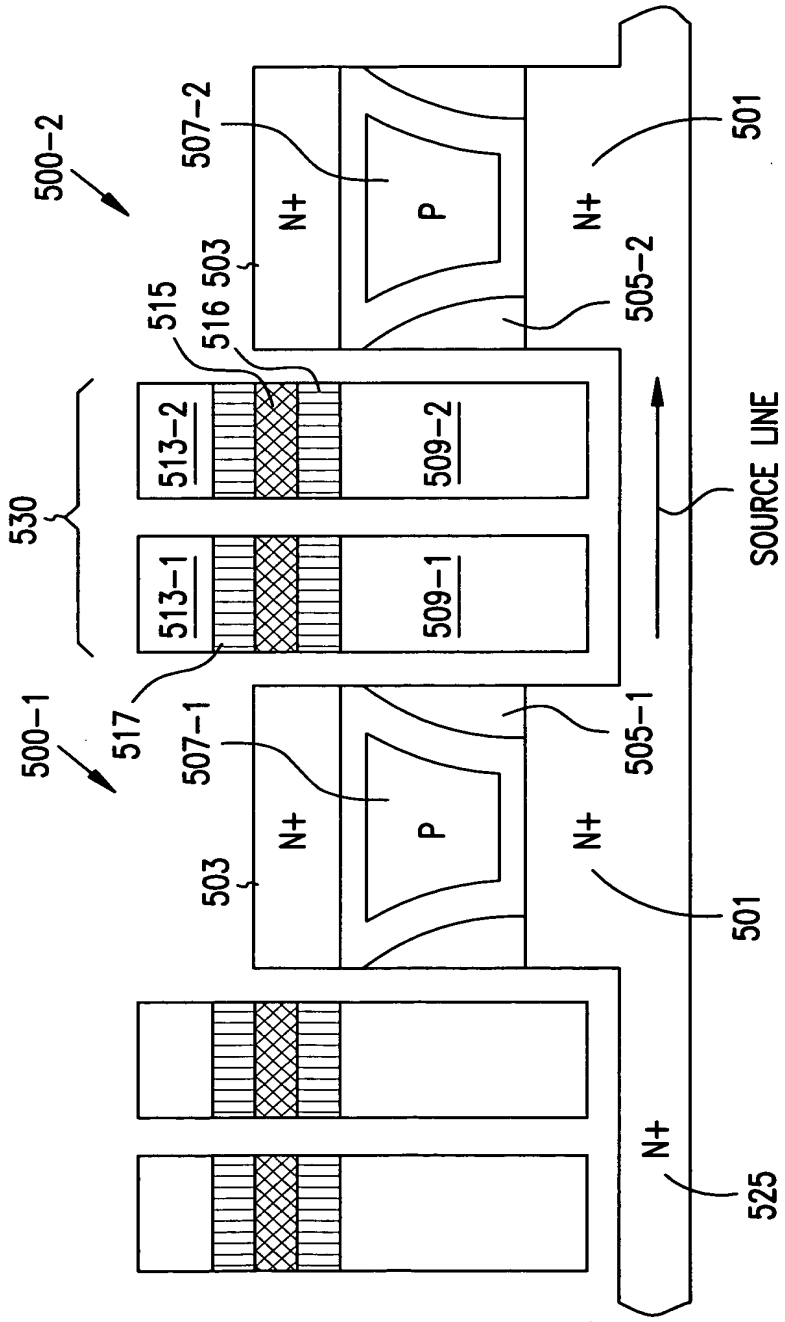

500-2
507-2
N+
P
N+
501
503
515
516
505-2
513-2
509-2
530
513-1
509-1
SOURCE LINE
500-1
517
507-1
505-1
N+
P
N+
503
501
N+
525

FIG. 5D

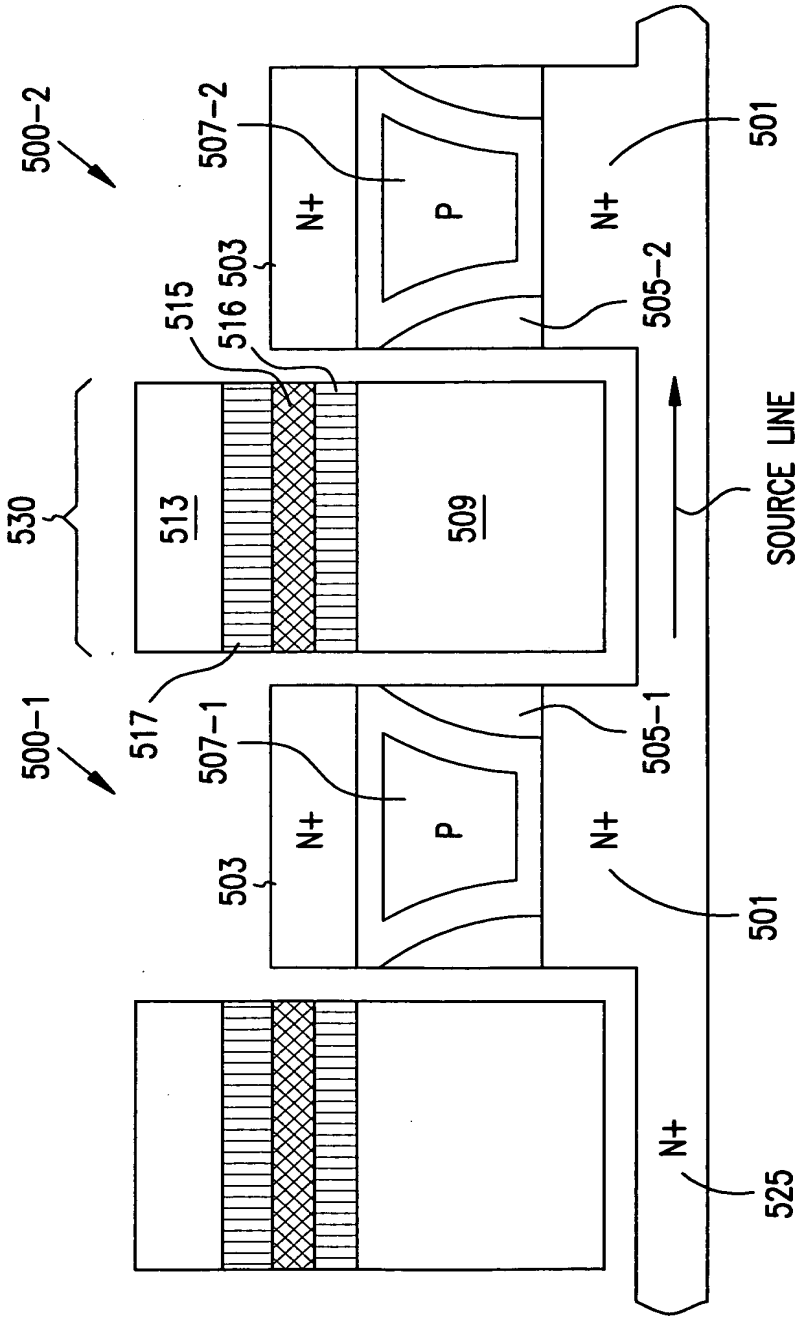

500-2
507-2
N+
P
N+
501
503
515
516
505-2
530
513
509
SOURCE LINE
517
500-1
507-1
505-1
N+
P
N+
503
501
N+
525

FIG. 5E

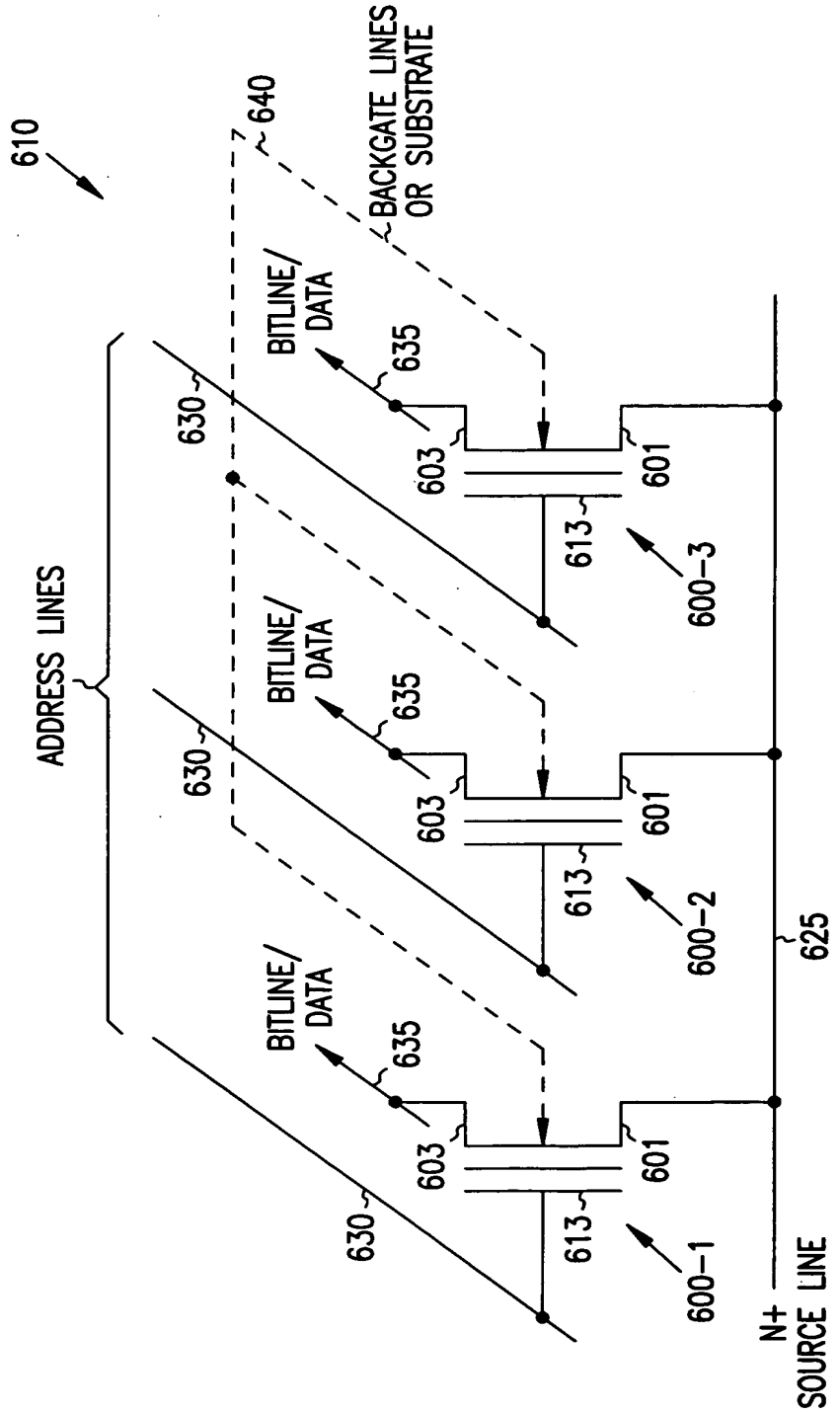

610
640
BACKGATE LINES OR SUBSTRATE
ADDRESS LINES
BITLINE/ DATA
635
630
603
601
613
600-3
600-2
600-1
625
N+ SOURCE LINE

FIG. 6A

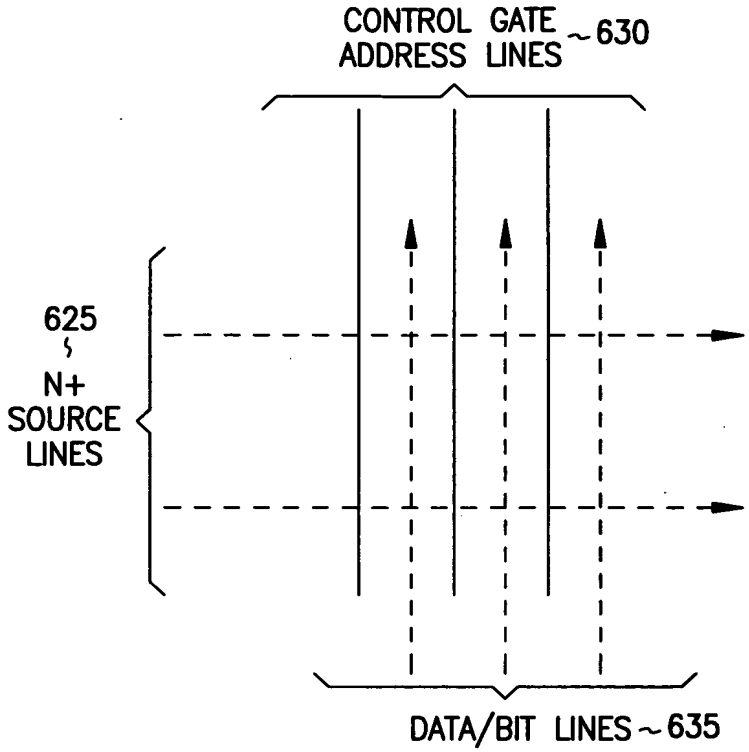


FIG. 6B

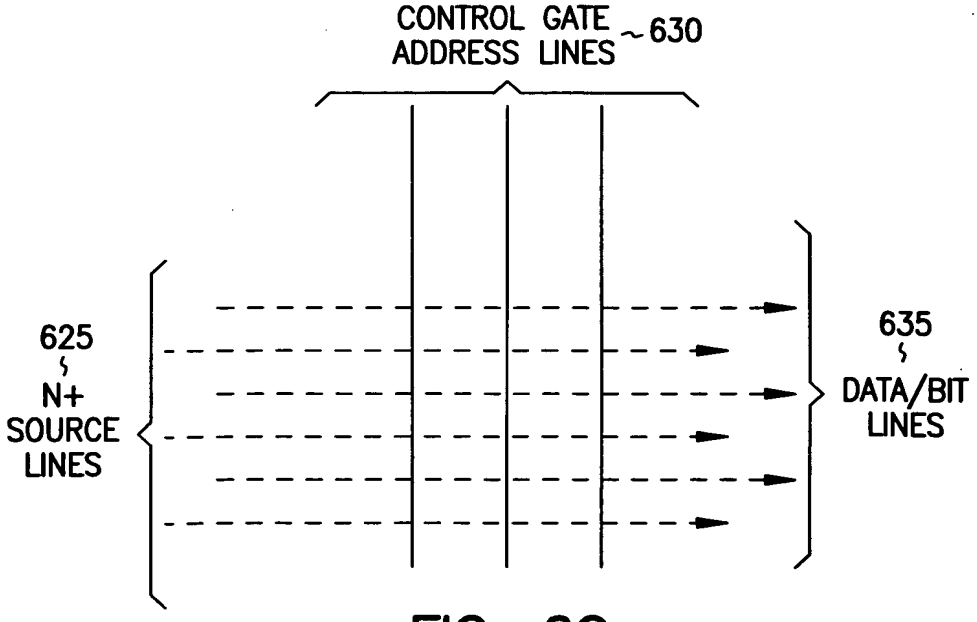


FIG. 6C

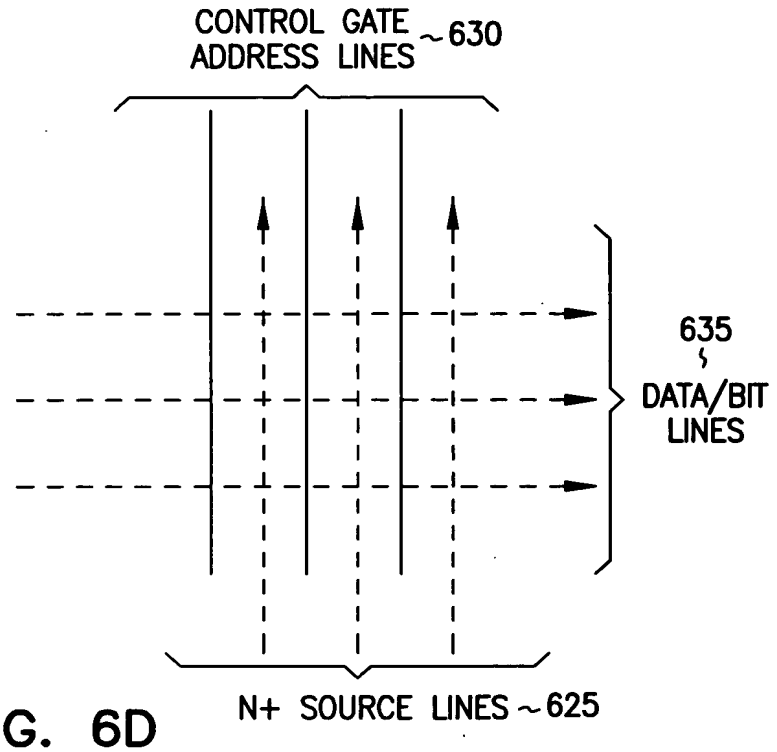


FIG. 6D

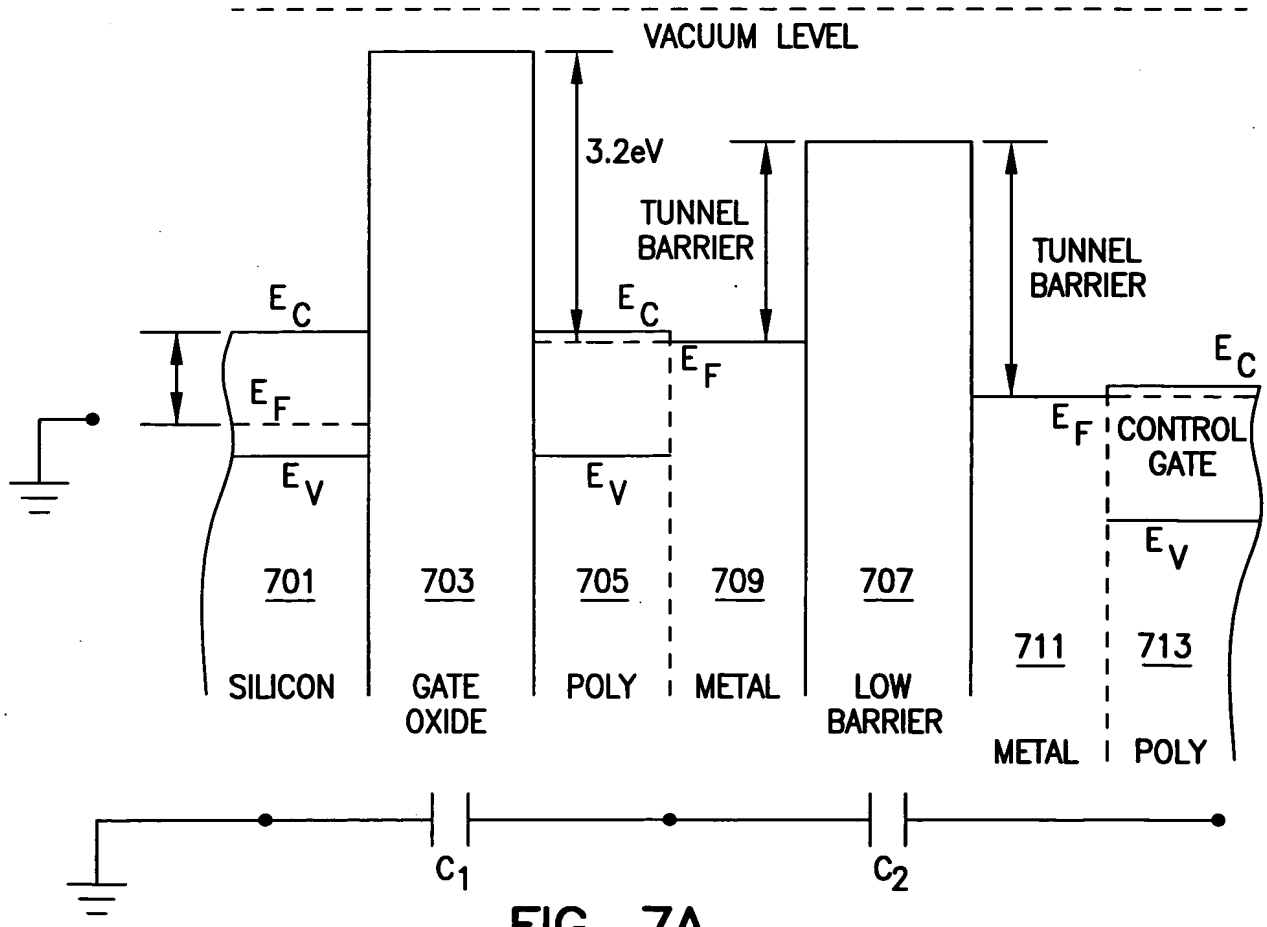
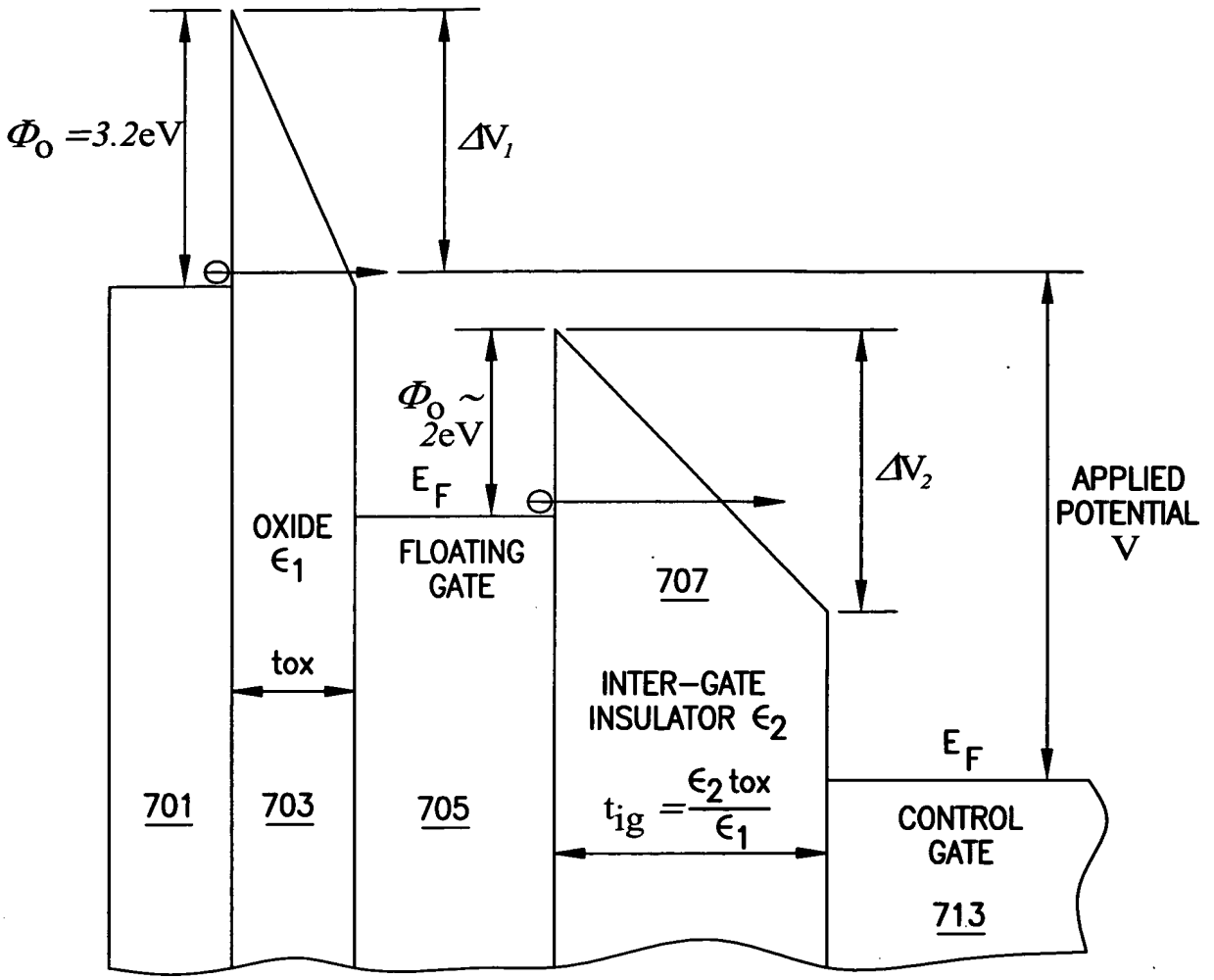


FIG. 7A



$$J = \frac{q^2 E^2}{4\pi h \Phi} e^{-E_o/E} \qquad E_o = \frac{8\pi}{3} \frac{\sqrt{2m_q^*}}{h} \Phi^{3/2}$$

FIG. 7B

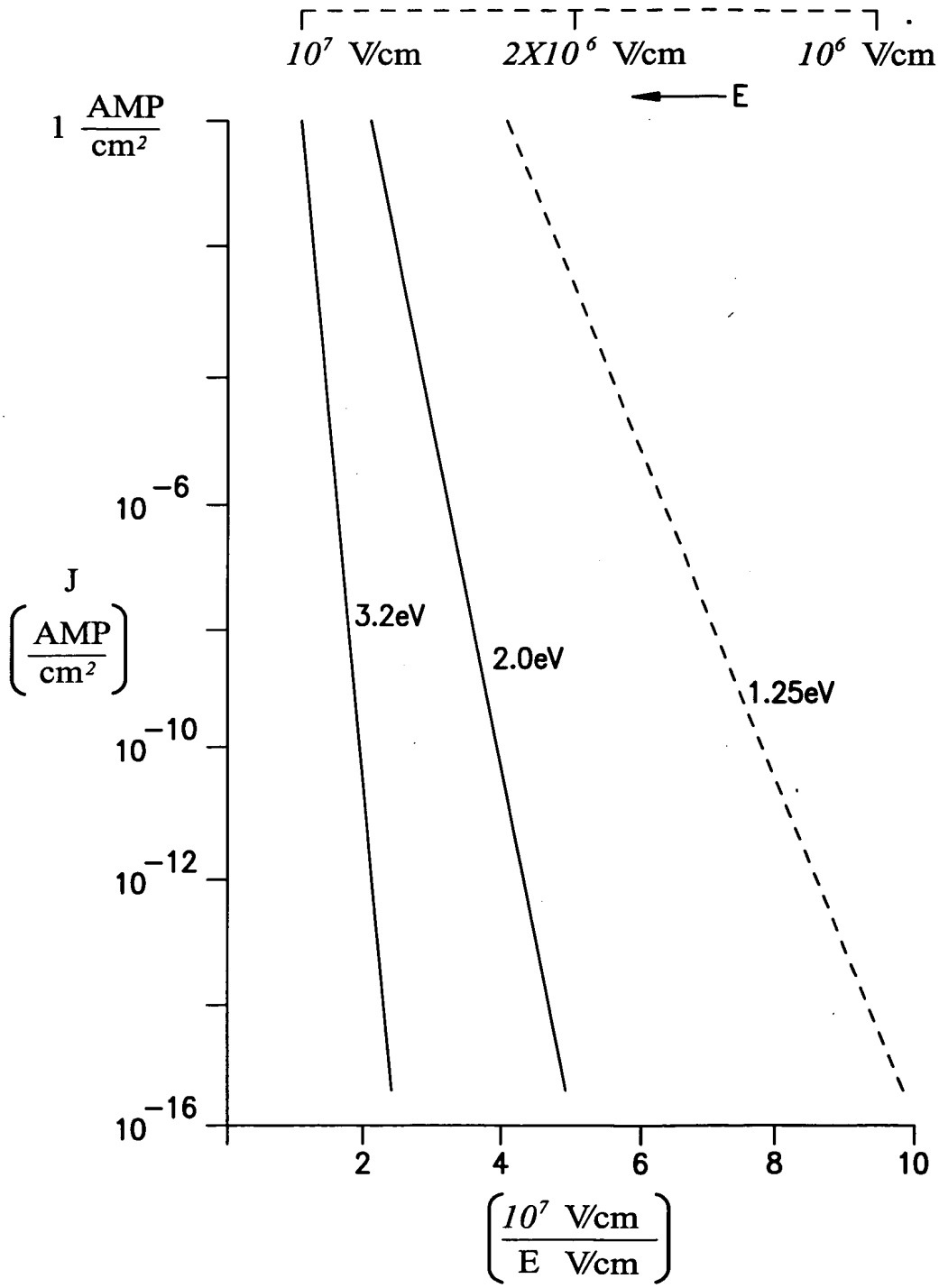

10^7 V/cm
$2X10^6$ V/cm
10^6 V/cm
E
1 $\frac{AMP}{cm^2}$
10^{-6}
10^{-10}
10^{-12}
10^{-16}
J $\left(\frac{AMP}{cm^2}\right)$
3.2eV
2.0eV
1.25eV
2
4
6
8
10
$\left(\frac{10^7 \text{ V/cm}}{E \text{ V/cm}}\right)$

FIG. 7C

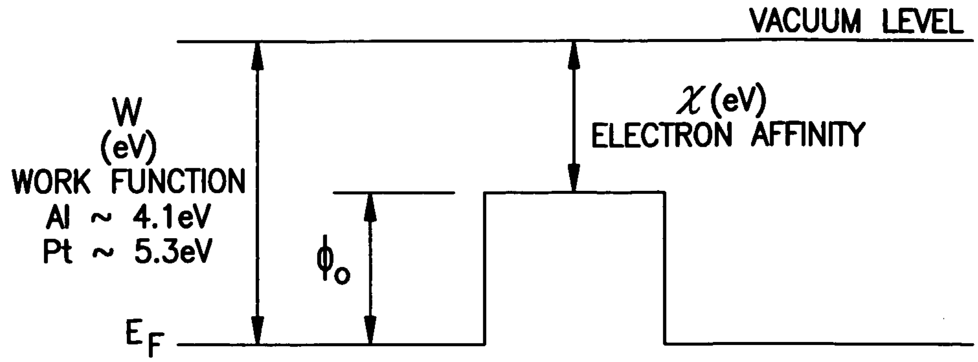


FIG. 8

	E_G	ϵ_r	ϵ_∞	χ	ϕ_o (Pt)	ϕ_o (Al)
Conventional Insulators						
SiO_2	~ 8 eV	4	2.25	0.9 eV		3.2 eV
Si_3N_4	~ 5 eV	7.5	3.8			2.4 eV
Metal Oxides						
Al_2O_3	7.6 eV	9 to 11	3.4			~ 2 eV
NiO						
Transition Metal Oxides						
Ta_2O_5	4.65 - 4.85		4.8	3.3	2.0	0.8 eV
TiO_2	6.8	30 80	7.8	3.9	est. 1.2 eV	
ZrO_2	5 - 7.8	18.5 25	4.8	2.5		1.4
Nb_2O_5	3.1	35-50				
Y_2O_3	6		4.4			2.3
Gd_2O_3						
Perovskite Oxides						
$SrBi_2Ta_2O_3$	4.1		5.3	3.3	2.0	0.8 eV
$SrTiO_3$	3.3		6.1	3.9	1.4	0.2 eV
$PbTiO_3$	3.4		6.25	3.5	1.8	0.6 eV
$PbZrO_3$	3.7		4.8		est. 1.4 eV	0.2 eV

FIG. 9

Metal	Osygen Solub.**, at. %	Oxide Stability Range***	Semicond. Type	Structure Temp.	Transform Temp., °C
Ta	0.8	$TaO_{4.7\text{-}5.0}$	n	Orthorhom.	t.p. 1350
Ti	28	$TiO_{3.82\text{-}5.0}$	n	Rutile	m.p. 1920
Zr	29	$ZrO_{3.66\text{-}5.0}$	n	Monoclinic	t.p. 1170
Nb	2.3	$Nb_2O_{4.86\text{-}5.0}$	n	Monoclinic	m.p. 1495
Al	v. small	$Al_2O_{2.999\text{-}3.0}$	n	Corundum	m.p. 2050
Pb	v. small	PbO	(p)	Orthorhom.	m.p. 885
Si	v. small	SiO_2	n or p	Tetra. (Cyst.)	m.p. 1713

FIG. 10

Metal	Work Function, eV From C-V	From Photoresponse	From Vacuum
Cs			2.2
Eu			2.5
Sm			2.7
Li			2.9
Ca			3.0
Al	4.1	4.1	4.25
Cu	4.7	4.7	4.25
Au	5.0	5.0	4.8
Ag	5.1	5.05	4.3
Ti			4.3
Mo			4.7
Rh			5.1
Ir			5.3
Pt			5.8
Se			5.9

FIG. 11

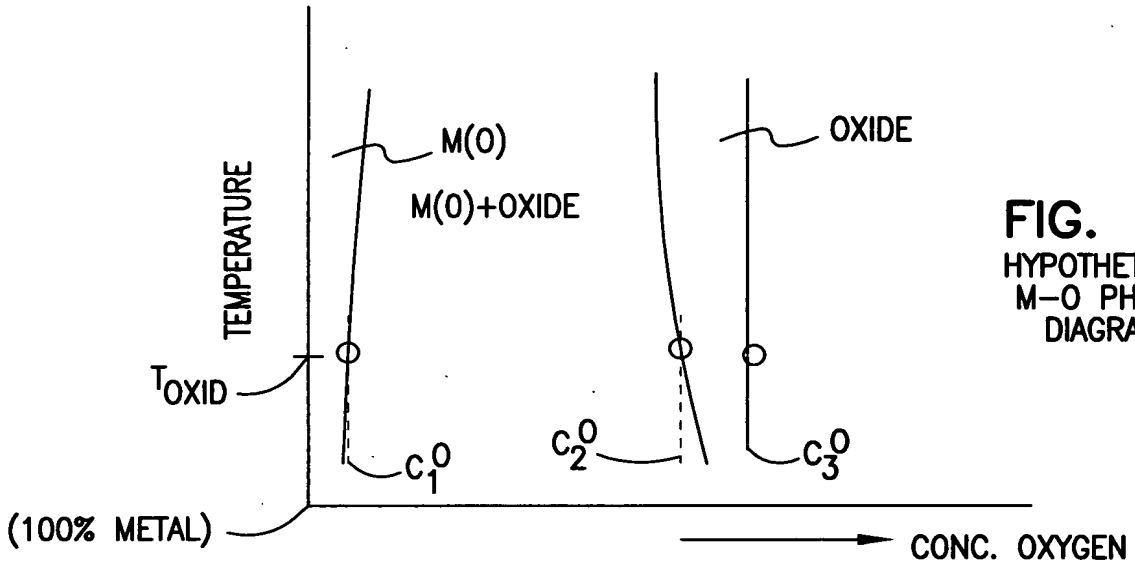


FIG. 12
HYPOTHETICAL M–O PHASE DIAGRAM

COMPOSITIONAL PROFILES

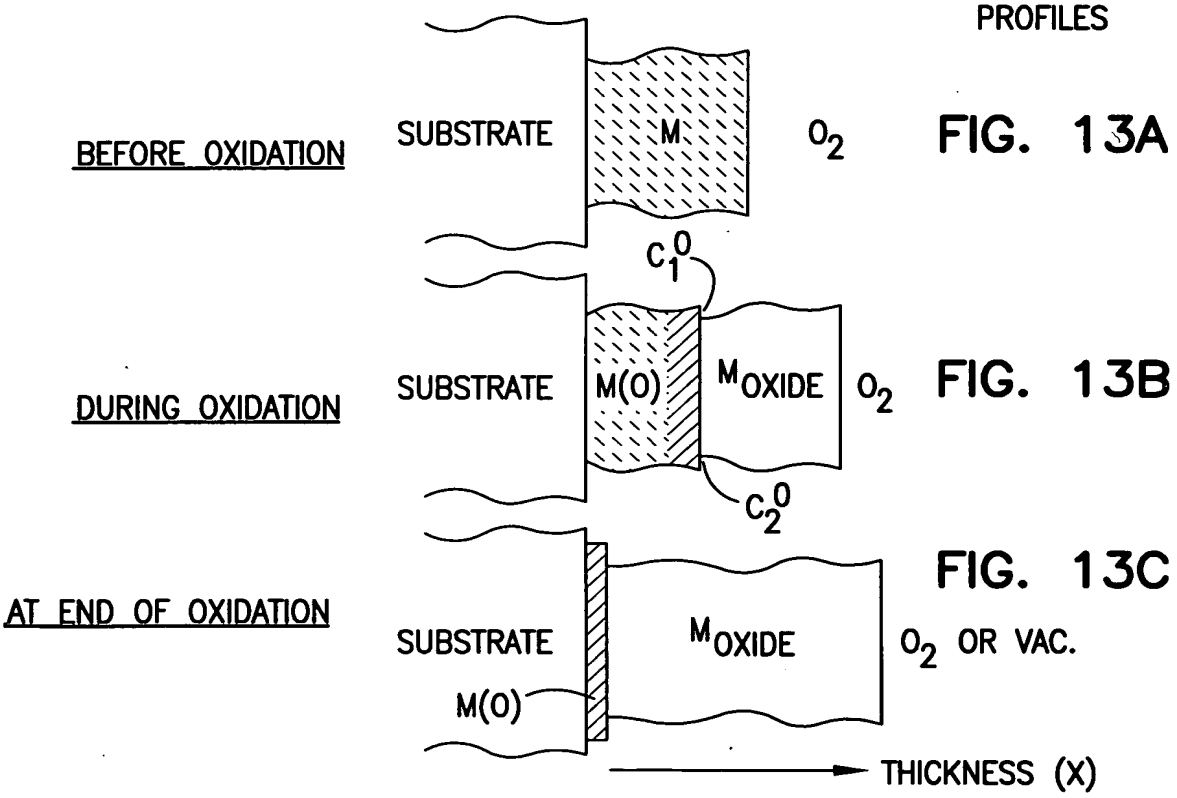


FIG. 13A

FIG. 13B

FIG. 13C

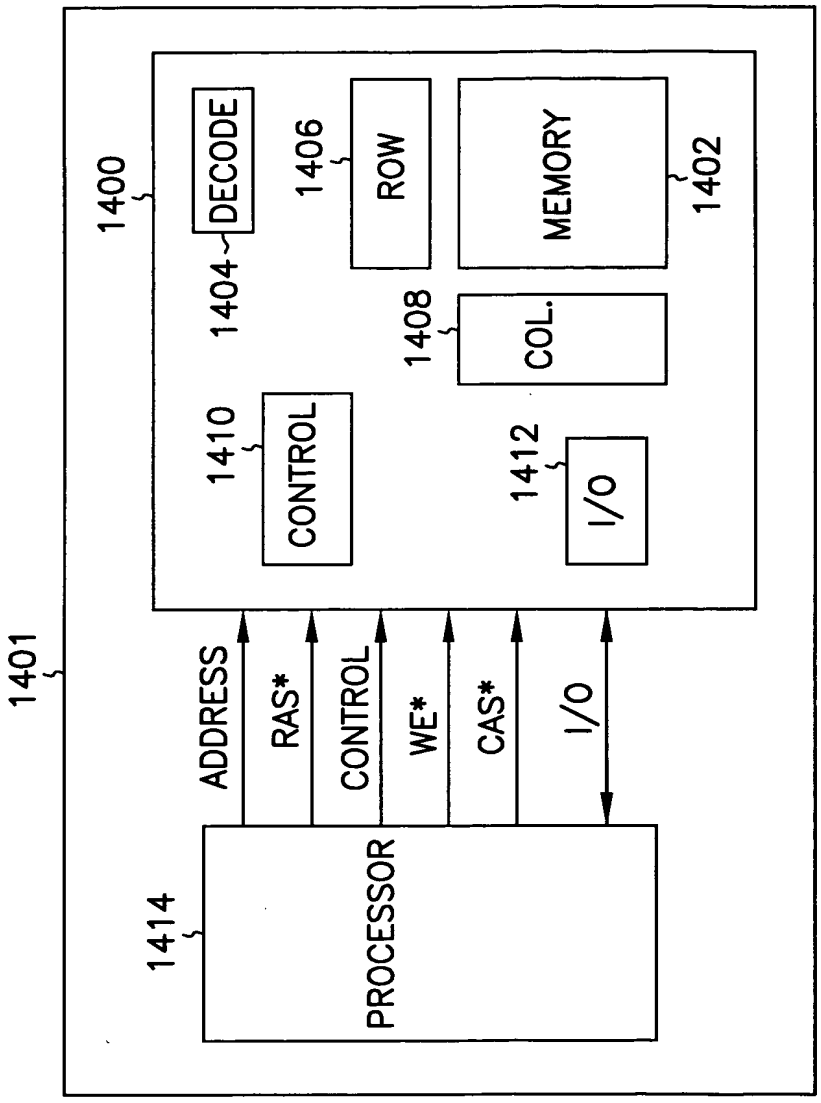


FIG. 14